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THE COMMODITIES MARKET BUBBLE

Money Manager Capitalism and the Financialization of Commodities

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Introduction

We do live in interesting times. Over the past decade, we've seen what are arguably the biggest equity, housing, and commodities booms in U.S. history. Could it be a coincidence? I've previously argued that the U.S. real estate bubble was not an isolated event that resulted from spontaneous mass delusion or excessive monetary ease, and, indeed, that the financial crisis spawned by problems in subprime mortgages would spread far beyond housing debt (Wray 2008). Following Hyman P. Minsky, I blamed money manager capitalism—the current economic system that dominates the global economy, characterized by highly leveraged funds seeking maximum returns in an environment that systematically underprices risk. In this paper, I will argue that the commodities boom is the direct product of a boom-bust cycle that is getting progressively more damaging to the economy.

With little regulation or supervision of financial institutions, money managers have concocted increasingly esoteric and complex instruments and practices that spread as quickly as a deadly virus in a sci-fi flick. Contrary to what is taught in economics and business courses, markets generate perverse incentives for excess risk, punishing those who are reluctant to join the bandwagon with relatively low returns. Those who do play along are rewarded, because highly

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leveraged funding drives up prices for the underlying assets until the inevitable collapse. But memories are short, dumb money is ample, and bailouts are frequent. Since each bust wipes out only a portion of the managed money, a new boom inevitably rises like Phoenix out of the ashes. Commodities are simply its latest reincarnation.

To make matters worse, the consequence of each boom (and bust) is more severe than the previous one. The "financialization" of America's residential real estate, which turned homes over to a giant international casino, will undoubtedly impose large economic and social costs for many years to come. Worse still is the financialization of food and energy. Many Americans are being forced to cut back on driving, heating their homes, and even buying groceries at the supermarket. The world's poor, meanwhile, are starving, as managed money puts the price of food out of reach (Pimentel 2008, Steinberg 2008).

Although there are a number of forces coming together in a "perfect storm" to drive up commodity prices, there is adequate evidence that financialization is a big part of the problem, and thus sufficient cause for policymakers to reduce the influence of managed money in these markets. Further, there is every reason to believe that this boom is going to crash in a particularly ugly way, so it is not too early to begin formulating the proper policy response today.

We will begin with an analysis of three explanations for the explosion of commodity prices in recent years: supply and demand, market manipulation by commodity producers and traders, and financial speculation. The typical explanation provided by economists is that supplies are naturally constrained, while demand has been climbing rapidly (e.g., the booming economies of China and India). All that can be done is to encourage the supply side, and the market will then efficiently allocate resources among competing wants (in the absence of market regulation). The second story involves market manipulation as evidenced by recent investigations by the Justice Department and actions by the Commodity Futures Trading Commission (CFTC). As we know, there is a long history of price manipulation in the metals market (readers will recall the Hunt brothers' attempt to corner the silver market). The most popular explanation is that financial speculation in commodity futures markets is the real culprit. Both the Senate and the House have held hearings into this issue (e.g., skyrocketing oil prices).

It appears quite likely that the rise of investments in commodity indexes—a particular kind of speculation that has been called "index speculation"—is the most important cause. The problem is mostly human made (i.e., rising energy and food prices do not result, for the most part, from any "natural" shortages) but it is also systemic, resulting from the operation of the type of capitalism we have inherited.

A final note: as this brief is being prepared for publication, commodity prices appear to have reversed course. However, a lot of leveraged money has gone into commodity markets (physicals as well as futures), so there will be significant fallout from the price slump. Further, without fundamental reform, we can expect managed money to immediately begin its search for yet another asset class to financialize. Thus, a policy response is still necessary to break the cycle of boom and bust.

Supply and Demand

Food riots. Grounded jets. Plummeting SUV sales. Rising prices and the return of stagflation and the misery index (the sum of inflation and unemployment). We all see the consequences of unprecedented across-the-board inflation in commodity prices.

According to our "principles of economics" textbook, the cause must lie somewhere between the "scissors" of supply and demand. Excess demand drives prices higher; fortunately, the process is self-correcting, as higher prices depress demand and call forth more supply. This could take some time to return to equilibrium, especially if government policies artificially inflate demand or restrict supply (e.g., subsidized purchases only help to drive prices even higher). The solution is to allow rising prices to diminish quantity demand, to encourage substitution into commodities that are more abundant, and to increase supply. In short, let the market work its wonders.

Most of the press, however, has focused on rising oil, corn, and gold prices. But, in fact, the boom has taken place across a wide range of commodities, and, indeed, is unprecedented in scope and size. There are eight commodities whose price rise had reached 500 percent or more by the end of June: heating oil, nickel, crude oil, lead, copper, zinc, tin, and wheat. For the 25 commodities typically included in the indexes, the average price rise since 2003 has been 203 percent (Masters and White 2008).

It is true that there have been recent supply problems associated with some of these goods (e.g., the "peak oil" arguments). Still, economists argue that if demand is extremely price inelastic, then prices could rise sharply whenever demand exceeds supply. Most of those favoring the "supply and demand" story

look to the demand side. In particular, this camp maintains that the rapid development of China and India is driving demand to increase in the face of a fairly inelastic supply, thereby boosting prices (Gros 2008). Add supply constraints to the mix, and prices could rise quickly. While this story is appealing, it is also flawed. World growth has not been unusually high, and there appears to be nothing at all unusual in the current growth cycle (Veneroso 2008a).

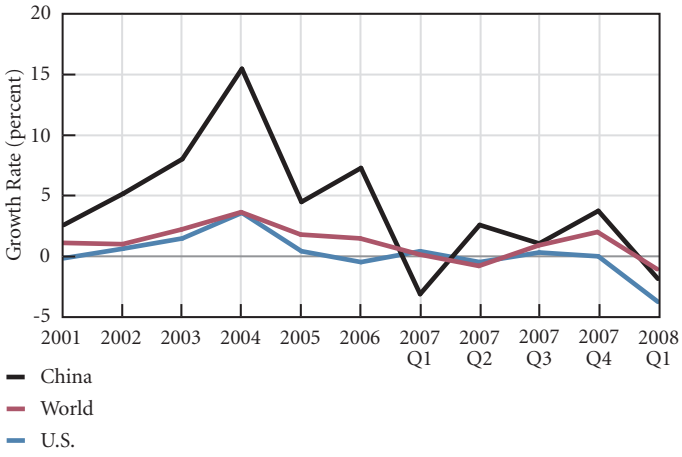
Of course, not all growth is the same, and it is conceivable that the development path chosen by China, in particular, generates high consumption of oil and other commodities. The United States, too, is profligate in its consumption. But even as the U.S. economy slowed considerably over the past year, prices remained firm. Americans *have* responded to rising gasoline prices in the manner economists expect, with consumption falling sufficiently to offset China's increased use of crude oil—yet crude prices barely responded.[1] Figure 1 shows U.S., Chinese, and global oil consumption since 2001. China's oil demand fell off as oil prices rose, while U.S. consumption stabilized by mid-decade, long before oil prices peaked.

As MIT's Richard Eckaus (2008) has pointed out, if the underlying cause had been "peak oil" and the *fear* of falling supply that drove prices, that should have been relieved to some extent by new discoveries of oil (indeed, proven oil reserves have been increasing at a faster rate than consumption) or expanded exploitation of substitutes (oil shales and oil sands). Moreover, even if oil is running out, according to Hotelling's rule (commonly applied to depletable resources), oil prices should rise at the rate of interest if production costs remain constant. Obviously, prices have been rising very much faster than that.

For many commodities, production costs fall in real terms due to innovations, so that market prices rise more slowly than overall inflation (Masters and White 2008). This is why investors have long shunned commodities as an inflation hedge. Eckaus (2008) also dispenses with the argument that the oil price boom is due to political instability in the Middle East. Moreover, dollar depreciation is often tagged as a contributing cause of price hikes, yet the dollar fell by only 10 percent against the euro between 2004 and mid-2008, even as oil prices quadrupled. Simply because supply and demand must be equal at the market price tells us little about the determination of that price.

The markets for commodities—especially oil—are far from perfectly competitive, while many commodities are targeted by government policy (e.g., as crude oil prices rose, the

Figure 1 Growth in Oil Demand—United States, China, and World



Source: Energy Information Administration

U.S. Congress decided to subsidize biofuels production, even though crop production is energy-intensive) (Mufson 2008). And, when food shortages appeared, nations began to prohibit food exports—driving global prices higher. Attributing these price pressures to "supply and demand" is misleading.

Further, economists' arguments ignore impacts of expected future prices on production today. Economists also ignore the possibility that an intermediary might take the supply off the market to wait for higher prices tomorrow. We should be skeptical of the simplistic application of inappropriate (economic) models to real-world phenomena. An intriguing example is market strategist Frank Veneroso's study of copper markets, which shows that copper use and price have defied the usual trend in the current cycle (Veneroso 2007, 2008b, 2008c). The growth of supply seems to have been at least twice as great as the growth of demand. If true, a lot of copper is being held off the market, and thus is helping to fuel rising prices. What we really need to know is where the demand comes from, and who controls the supply.

Manipulation of Supplies and Prices

In recent years, there have been several well-publicized cases of commodity price manipulation. For example, British Petroleum monopolized propane supplies to drive up prices (Stupak 2007), and Amaranth manipulated natural gas spot prices, while other cases involved silver, aluminum, copper, and palladium (Veneroso 2008d). However, the CFTC is biased against intervention.

According to the CFTC, its "core mission" is narrowly construed to detect the "illegal and intentional manipulation" of prices (Lukken 2008a, 2008b). This statement seems to reject CFTC responsibility for regulating *legal* speculation—something that was clearly part of its original mission. One might argue that the CFTC focuses on individual traders who *illegally* move prices by a few basis points to make small profits, while pension funds and hedge funds might be increasing prices fivefold through legal buy-and-hold strategies. In other words, by limiting its concern to illegal manipulation, the CFTC ignores the much larger impacts on prices that result from speculative inflows of managed money.

Indeed, it is difficult to avoid the conclusion that the CFTC bears some responsibility for encouraging the massive flow of managed money into the commodity futures market in the first place by actively promoting the notion that commodity futures should be seen as an asset class, yet the agency has steadfastly denied that the flows impacted commodity prices (CFTC 2008a).[2] Moreover, the inspector general for the CFTC recently began an investigation to determine whether the CFTC's interim report had intentionally misled Congress in order to help defeat antispeculation legislation[3] (Talley 2008).

These actions seem to have followed a long-term hands-off approach to commodity markets by the executive branch. Just as the Federal Reserve under Alan Greenspan's leadership refused to impose margin limits during the NASDAQ boom, the CFTC has failed to exercise its mandate to constrain leveraged positions in commodity futures. Unfortunately, at least some of the CFTC's actions appear to border on boosterism.[4]

As an example, so-called "black pools"—customized energy derivatives that did not trade on registered exchanges—were exempted from regulation in 1994. Congress compounded the problem by including the "Enron loophole" in 2000's Commodity Futures Modernization Act, so that unregulated over-the-counter electronic exchanges would not be required to keep records or to file reports with the CFTC (Davis 2008, Engdahl 2008). The accounting fiasco that resulted did not deter the CFTC from granting further exemptions from oversight. In 2006, the agency allowed the InterContinental Exchange, or ICE (the leader in electronic energy exchanges), to provide trading terminals in the United States for the trading of U.S. oil futures on the ICE futures exchange in London—promoting an escape route around the CFTC-regulated NYMEX. Hence, the CFTC actually encouraged development of a largely unregulated competitor to the lightly regulated U.S. exchanges. In any case, the agency is woefully understaffed, and unless Congress and the president are willing to allocate a much larger budget to the CFTC, it is unlikely that market oversight will significantly improve.

So long as use of the term "manipulation" is limited to the actions of individual traders, it cannot play a significant role in the current commodities price boom, since the most important markets—oil, soybeans, corn, wheat—are too big to be influenced for anything but the shortest time period. However, the manipulation of commodity markets does not explain the broad-based commodities boom over the extended run-up in prices that has been taking place for several years.

What is potentially far more important is the impact of large pools of managed money following similar strategies, without any necessity for explicit collusion. In the case of the subprime boom, regulators and supervisors turned a blind eye to the systemic risk. It appears that the CFTC is now doing the same, focusing on individual price manipulators while ignoring its Congressional mandate to ensure that commodity prices reflect the laws of supply and demand.

Index Speculation in Commodity Futures Markets

A number of researchers have demonstrated that commodity prices are not correlated with returns from fixed-income instruments and equities. Thus, holding commodities would reduce volatility in portfolio returns; since commodities do fairly well in an inflationary environment, adding them to a portfolio provides an inflation hedge.[5] However, holding commodities is expensive, so money managers look to the commodity futures market, where paper claims could be held rather than the commodities themselves. Since these money managers do not want to *ever* take shipment, the contracts are "rolled" on the scheduled date—into another futures contract, one with a farther-off delivery date.

There are three main types of participants in commodity futures markets: hedgers, traditional speculators, and index speculators. "Hedgers" are those with a direct interest in the physical commodities themselves. They use futures markets to reduce or eliminate losses due to unforeseen movements in commodity prices. The traditional speculator facilitates hedging by taking the other side of the trade with hedgers; in other words, by taking the price risk that hedgers do not want.

Traditional speculators are said to provide liquidity by increasing the volume of transactions.

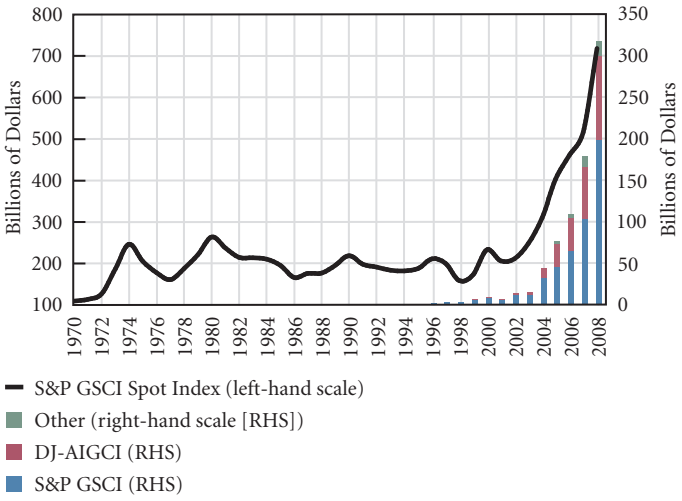
In contrast, index speculators—typically hedge funds, pension funds, university endowments, life insurance companies, sovereign wealth funds, and banks—are said to "consume" liquidity by taking only long positions, in a "buy and hold" strategy. They are the only market players insensitive to price, allocating a percentage of their portfolios to each commodity regardless of price in order to diversity risk. Masters and White (2008) argue that the commodity futures market is the single market that brings together participants in the physicals market plus speculators in financial derivatives tied to the physicals.

Prior to the 1990s, the "prudent investor" rule prohibited pension plans from buying commodity futures contracts (Masters and White 2008). It was the collapse of the equities market in 2000 and the discovery that the performance of commodities was not correlated with equities performance that led to a belief that futures contracts could be used to reduce portfolio risk. This is what allowed Goldman Sachs as well as other indexers to successfully push commodity futures as a new asset class for prudent investors.

To simplify allocation, managed money typically buys one of the commodity futures indexes—hence the term "index speculator."[6] Energy commodities dominate the indexes, with crude oil making up 51.4 percent of the index, and all petroleum-related products accounting for 78.2 percent. The biggest agricultural commodities weightings are given to corn, soybeans, and wheat; the largest shares for metals are in aluminum, copper, and gold. Because commodity futures contracts do not pay any yield, the only possible source of return is an increase in the price of the contracts. For this reason, the purchase of a commodity futures index is fundamentally a speculative activity.

The size of managed money funds is gargantuan relative to the size of commodity futures markets (Masters 2008a). By examining "open interest" (a measure of the dollar value of positions in commodity futures contracts that are held overnight) in 2002 and 2008, the dollar value of contracts swelled many orders of magnitude greater than the growth in demand for the underlying commodities. While index speculators bought just over half of the futures contracts, physical hedgers purchased one-fifth. It is hard to avoid the conclusion that the index-speculator tail is wagging the physical-hedger dog when it comes to commodity futures.

Figure 2 S&P GSCI Spot Price Index vs. Index Speculator Assets



Source: Masters and White 2008

What is important is that once a fund has decided to allocate, say, 5 percent of its investments to commodity futures, it stays in the commodities. As the total portfolio grows, the fund continues to increase its holdings of commodity futures indexes in order to hit its allocation target. As this strategy caught on, huge volumes of money flowed into the indexes, and thus into the commodity futures markets. These inflows of funds have driven the price of commodity futures ever higher (Figure 2). Moreover, as swap dealers purchase more contracts, the price of oil rises. The picture seems clear: the match between the flow of managed money into futures markets and the spot price of commodities is remarkable—higher money inflows lead to higher prices.

Futures markets play two essential roles: to hedge price risk and for "price discovery." Commodities production is often local, while final consumption is more geographically dispersed. Futures prices are readily available and reflect real-time supply and demand. Thus, local physical commodity markets have come to rely on futures markets as the primary source of price information on the national and international markets.

The use of commodity futures markets has eliminated the sometime large differences between prices in various regional spot markets that existed prior to the 1980s. Michael W. Masters (2008b) emphasizes the point: "*In the present system, price changes for key agricultural and energy commodities originate in the futures markets and then are transmitted directly to*

the spot markets." Even the major oil pricing service, Platts, argues that spot prices are set with reference to NYMEX futures prices—a point also made by the CFTC when it argues that one of the two essential services played by the futures markets is price discovery!

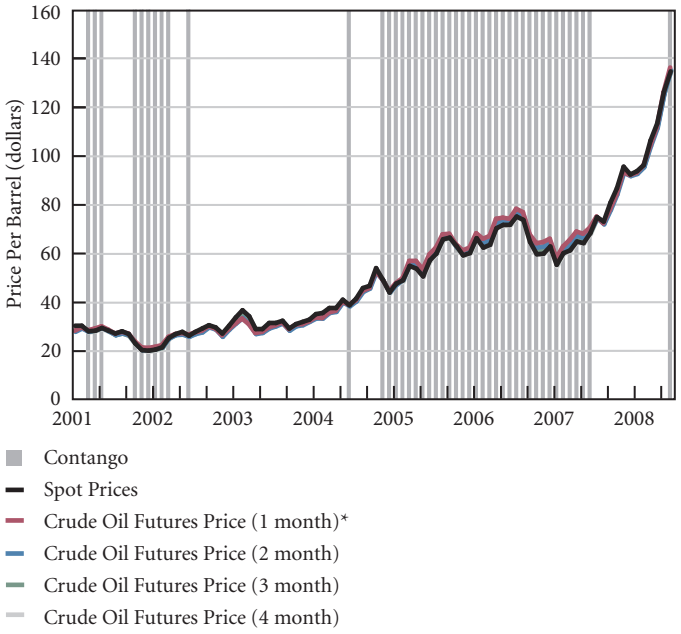
This is not what is usually taught in economics textbooks. According to traditional theory, "fundamentals" determine spot prices through the forces of supply and demand (as discussed above). Futures prices are then equal to spot prices plus the costs of carry, less convenience yield. A *contango* exists in this case: the futures price is higher than the spot price, with contracts priced higher the farther out the expiration date. However, this is not the case in most commodity markets. The supply of futures contracts offered by commercial hedgers will exceed the demand, leading to futures prices that are below cash prices—what John Maynard Keynes called the "natural backwardation" of commodity futures markets. Virtually all the prior experiences of commodity booms have been characterized by this configuration. However, in the current price run-up, the opposite has been the case, as futures typically have traded above spot, suggesting dominance of the market by speculative demand.

The expectation of continually rising futures prices creates an incentive to hold physical supplies off the spot market. Those who are receiving physical supplies have an incentive to roll them over into futures contracts with a later maturity date. Both actions serve to drive up spot prices in the wake of rising futures prices.

Since spot prices are set with reference to futures prices, market fundamentals and the forces of supply and demand *cannot* be the sole determinants of the spot price. Indeed, as Figure 3 shows, there is very little divergence between crude oil spot prices and futures prices. While finance theory teaches that contango is the "natural" relation, backwardation is normal for many commodities. This creates an inducement for speculators to buy the futures contracts (taking long positions), promising later delivery from producers (Kregel 2008).

If spot prices are set in reference to futures, a speculative boom is triggered, since the rising spot market validates the expectations and thereby fuels greater demand for futures contracts. Figure 3 is shaded to indicate periods of contango in crude oil prices. From late 2004 through mid-2007, oil was in contango, possibly indicating a speculative boom. The flow of managed money into commodity futures indexes grew during this period, coinciding with the contango in oil (the commodity

Figure 3 Crude Oil Spot Prices vs. Futures Prices



*All Prices for Light-Sweet, Cushing, Oklahoma

Source: Energy Information Administration

that has the largest weighting in the indexes). This is also the period in which the price of oil futures began to rise very quickly.

Commodities markets deviate substantially from the perfectly competitive model, with substantial evidence that prices are administered rather than set by fundamental forces of supply and demand. It is no coincidence that futures prices soared over the past four years, as huge sums of managed money flowed into futures markets. This reinforced other factors that had been driving up prices, including rapid growth in China and India as well as some supply constraints and inventory manipulation. Government policies (e.g., export restrictions and biofuel incentives) also played a role. A perfect storm was created, one in which almost every participant's interest lay in continued price gains.

The CFTC uses only three categories to distinguish among types of market participants: commercial (historically about 50 percent), noncommercial (35–40 percent), and unreported (5–10 percent). "Commercial" is supposed to include those who have an association with the physicals market (e.g., price-hedging producers and buyers) and exclude speculators. However, the CFTC includes in this category swap dealers, which are banks that provide over-the-counter derivatives. Hence, many "commercial"

purchasers are speculators of one type or another. The noncommercial category is supposed to comprise the speculators—those with no direct interest in the physical commodities—but that number is undercounted because swap dealers are excluded. There is now little question that a large majority of positions is held by speculators, and that the positions held by just one trader could move the market. With positions so large, market manipulation looks like a possibility.

Policy Response

Let us assume for the moment that index speculators have helped to fuel the apparently unprecedented broad-based commodities price boom. Should policy react? If so, how?

To the extent that index speculators help to drive up commodity spot prices that then increase pressures on producer and consumer prices, the collective attempt to hedge against inflation actually *accelerates* inflation. And, of course, to the extent that index speculators cause commodity prices to rise ever upward, users of commodities cannot really win by hedging.

Also worth contemplating is the end of the speculative boom, when the large inflows of managed money subside. Suddenly, the liquidity to which commodity producers have become accustomed begins to dry up. A strong price reversal can take place as the market reverts to backwardation (e.g., the price of oil brushed up against $150 a barrel in mid-July but had dropped below $115 by mid-August), where producers who had made business plans based on price increases find that they cannot succeed in an environment of falling commodity prices.

The Commodity Exchange Act of 1935 calls for controlling speculation and ensuring that the exchanges function to provide a market for the *physical* commodities. The legislation also specifically exempts legitimate hedging from such restrictions. Clearly, we have moved far—too far—from the intentions of the U.S. Congress, financializing commodities markets with the dominant players in futures markets having no interest in the underlying physicals.

The notion that "supply and demand" efficiently allocates resources through the price system has little application to today's money manager capitalism, in which assets are purchased with leveraged money and with a view to price appreciation rather than to meeting consumption demands. No rational policymaker would allow speculators to purchase the cure to cancer only for storage in warehouses, nor should policymakers allow, much less encourage, money managers to fuel inflation, currency depreciation, hunger, and unemployment by driving commodity prices beyond the reach of consumers.

The first order of business is to direct the CFTC to broaden its mission so that it can accomplish the overarching objective of the original Commodity Exchange Act: to limit the effects of speculation on commodity prices. This should include bringing more of the market under regulation by eliminating the various loopholes. Similar rules, regulations, and oversight should be applied to all players. The CFTC must reestablish and enforce position limits.[7] In emergencies (such as a euphoric boom), margin requirements for purchases should be raised. The agency should also be directed to publish data on participants in futures markets to help distinguish among hedgers, speculators, and index speculators. Greater transparency will not only permit better policy formation but also help to protect markets from manipulation. The CFTC must also work more closely with regulators in other countries to promote greater uniformity of practices. To accomplish all of this, its budget must be increased, and future funding needs to keep pace with growth of the markets.

If, as this brief concludes, speculators dominate futures markets, Congress should consider the costs and benefits of allowing index speculators to pursue buy-and-hold strategies. If Congress should find that the public interest is threatened by index speculation, then it is appropriate to prohibit commodity index replication strategies. Masters and White (2008) have argued for revision of the prudent investor rule to explicitly prohibit pension investment in commodities, and they would impose "liquidation-only" rules on index speculators so that further purchases of commodity futures contracts would be prohibited in order to avoid a rapid sell-off.

Congress also needs to consider what can be done to cushion the impending commodities market collapse. It is all too easy to say that government ought to stay away and let the market punish foolish speculators. Those holding futures contracts that cannot be rolled over except at catastrophic loss include our pension funds, banks (admittedly, mostly foreign), and hedge funds. Further, to the extent that futures prices affect spot prices, producers of agricultural commodities will be devastated and alternative energy suppliers hurt by falling crude oil prices. To help relieve distress, Congress needs to consider ramped-up global food aid this year, purchasing agricultural output to help U.S. farmers facing falling prices, to be distributed to the world's

hungry. American consumers need help in the form of energy relief; this can be accomplished through checks that can be called a tax rebate or a fiscal stimulus—whichever is more politically palatable. This will help to recharge the U.S. economy. American producers—especially of alternative energy—also need to be protected (temporarily) from falling commodity prices. More subsidies for wind, solar, and geothermal energy will be needed.

The U.S. (and global) financial sector will continue to reel from the crisis that began with subprime mortgages. Pension funds will be threatened, as well as the solvency of the Federal Deposit Insurance Corporation. Congress will have to walk a fine line between allowing the truly deserving to bear pain, and a pragmatic bailout to keep the social costs of failures from hindering recovery. Bailouts will be needed, but strings must be attached in the form of regulatory constraint.

Policymakers must take the initiative to determine appropriate asset classes—what can and should be financialized—for our protected funds. Senators Joseph I. Lieberman, Susan Collins, and Maria Cantwell introduced the bipartisan Commodity Speculation Reform Act of 2008 on July 10 to amend the Commodity Exchange Act. It would accomplish several of the objectives outlined above (Lieberman 2008). Unfortunately, the legislation does not address the bigger problem of the propensity of managed money to destabilize one market after another. The wisdom of guaranteeing and promoting the growth of managed money is an issue that needs to be addressed, but it is one that will almost certainly have to await a new administration and a new Congress.

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Notes

1. With, of course, the caveat that, as of mid-August 2008, commodity prices have finally started coming down.
2. In its final report, the CFTC recommends preliminary actions to increase transparency and improve controls in the marketplace, along with the creation of a new "swap dealer" classification for reporting purposes. Acting Chairman Walter L. Lukken states that the new recommendations "represent steps in modernizing the agency's approach to oversight, while ensuring that the markets remain competitive, open, and on U.S. soil" (quoted in CFTC 2008b). However, the report also states that, while there was an increase in the net notional value of commodity index business in crude oil futures, it appears to be due to an appreciation of the value of existing investments caused by the rise in crude oil prices, and not the result of more money flowing into commodity index trading.
3. Concerns that the CFTC was intentionally misleading Congress were heightened when it became known that the commission had reclassified one very large trader as "noncommercial" (a category comprising speculators) just before it released its interim report in July. The reclassification had been withheld from the report and from testimony presented to Congress even though it tipped the balance toward speculator dominance of futures markets.
4. Interestingly, Gregory Mocek, who had been director of enforcement at the CFTC since 2002, left the commission in early July to join the law firm of McDermott Will & Emory, which represents the International Swaps and Derivatives Association on federal antimanipulation efforts (Lobsenz 2008). Students of the 1980s savings-and-loan crisis will recall a similar "revolving door" in which regulators were offered lucrative positions in those institutions they were supposed to oversee. It was reported that Mocek's new firm said he "would be invaluable in helping their clients fend off government energy manipulation investigations—an area that Mocek helped pioneer at the CFTC." Apparently, Mocek had been a feared enforcement officer, helping to lead cases against Enron, Amaranth, Dynegy, and other large energy companies. Perhaps energy price manipulators can sleep better now.
5. For example, the California Public Employees' Retirement System (CalPERS) Statement of Investment Policy issued on February 19, 2008, includes commodities as a major part

of its inflation-linked asset class, which comprises 5 percent of its total portfolio. The allocation within the inflation-linked asset class is as follows: commodities, 1.5 percent; inflation-linked bonds, 1 percent; infrastructure, 1.5 percent; and forestland, 1 percent. It obtains its positions in commodities through commodity futures that try to match the S&P GSCI Total Return Index. Note that the correlations that encouraged managed money to move into commodities could well break down by the flood of money, since those correlations are obtained from a period in which such flows were insignificant. Further, if a crisis follows the current boom, it is unlikely that past correlations will persist.

6. Strictly speaking, index speculators do not "buy" the index but rather outsource management of their futures trading to one of the Wall Street banks, which tries to replicate one of the indexes by purchasing a basket of commodity futures contracts with the same weighting scheme as the index (Masters and White 2008). It is reported that 85–90 percent of institutional investors enter into over-the-counter commodity index swaps with Wall Street banks. Approximately 70 percent of this business is handled by just four banks: Goldman Sachs, Morgan Stanley, JPMorgan Chase, and Barclays. These four account for about a quarter of all contracts on the commodity futures exchanges (Greenwich Associates 2008, Masters and White 2008).
7. Shockingly, the CFTC has taken the opposite view: "In general, position limits are not needed for markets where the threat of market manipulation is non-existent or very low" (www.cftc.gov/industryoversight/marketsurveillance/speculativelimits.html#P8_883). This reflects the commission's erroneous interpretation that manipulation alone—not speculation—poses a threat worthy of oversight.

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